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FIG. 1A

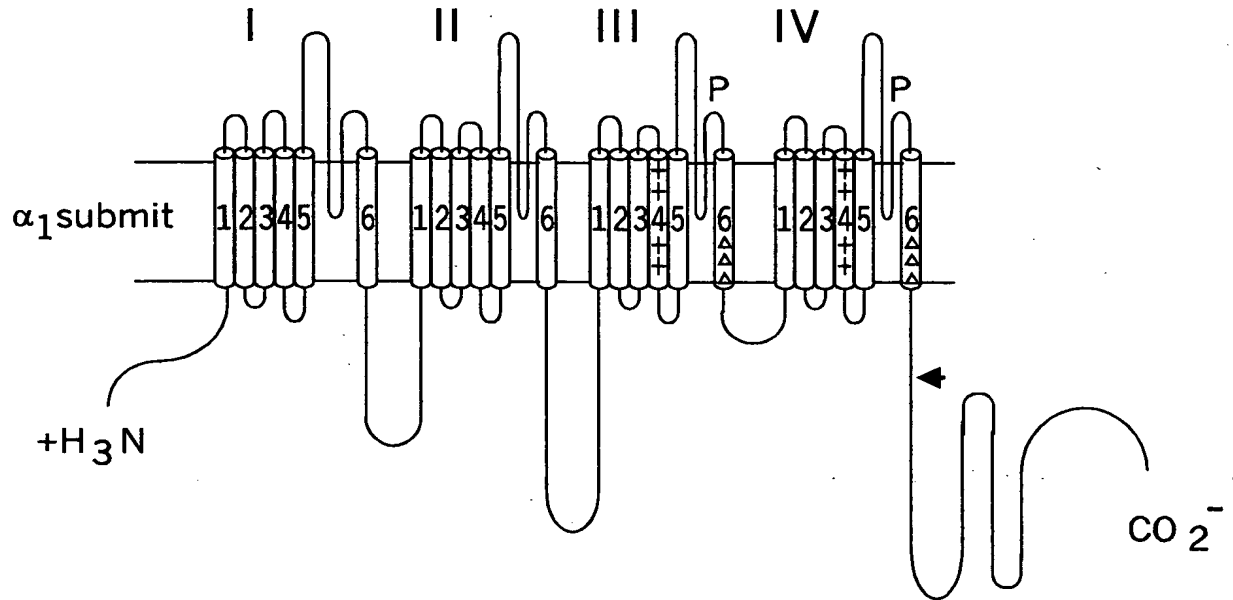


FIG. 1B

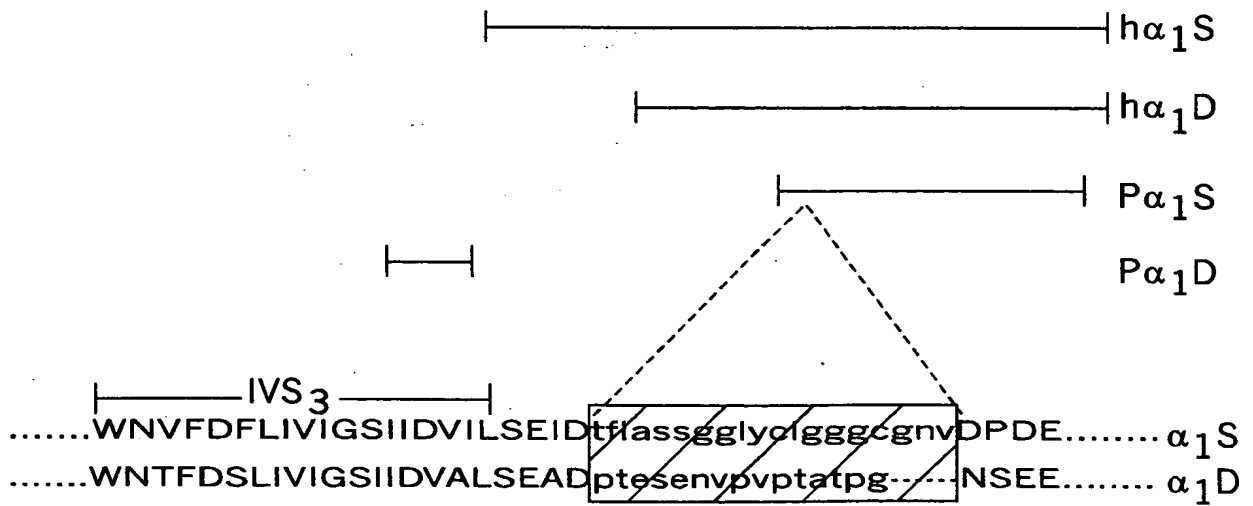


FIG. 1C

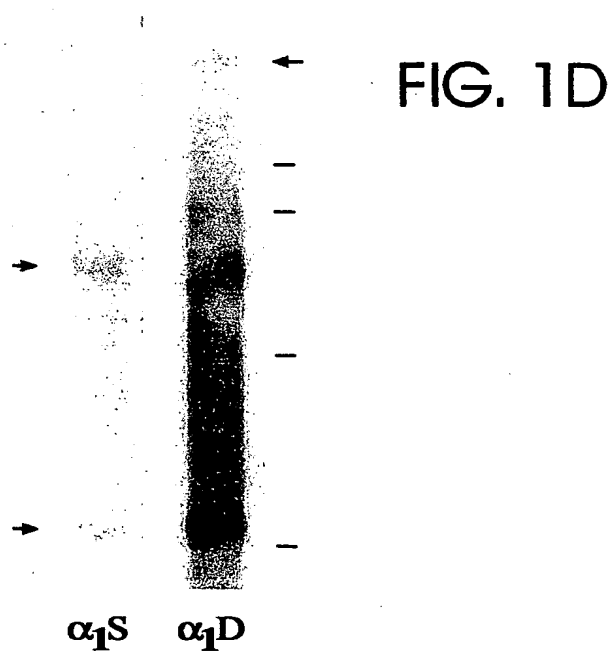
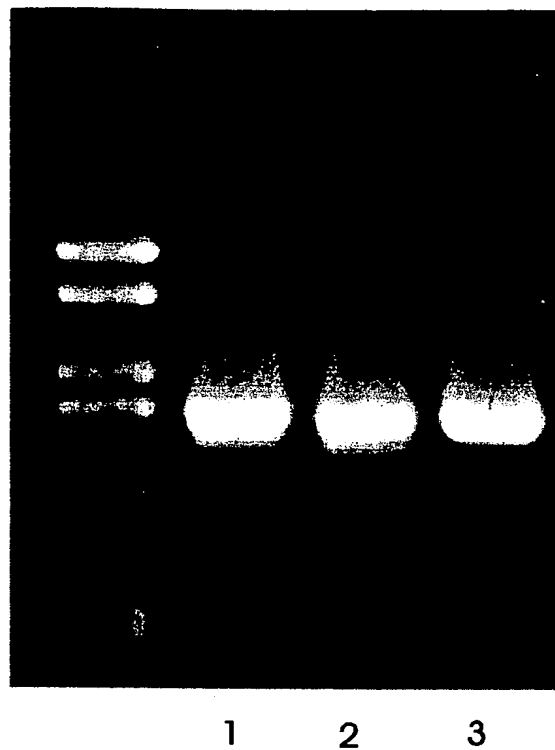


FIG. 2A

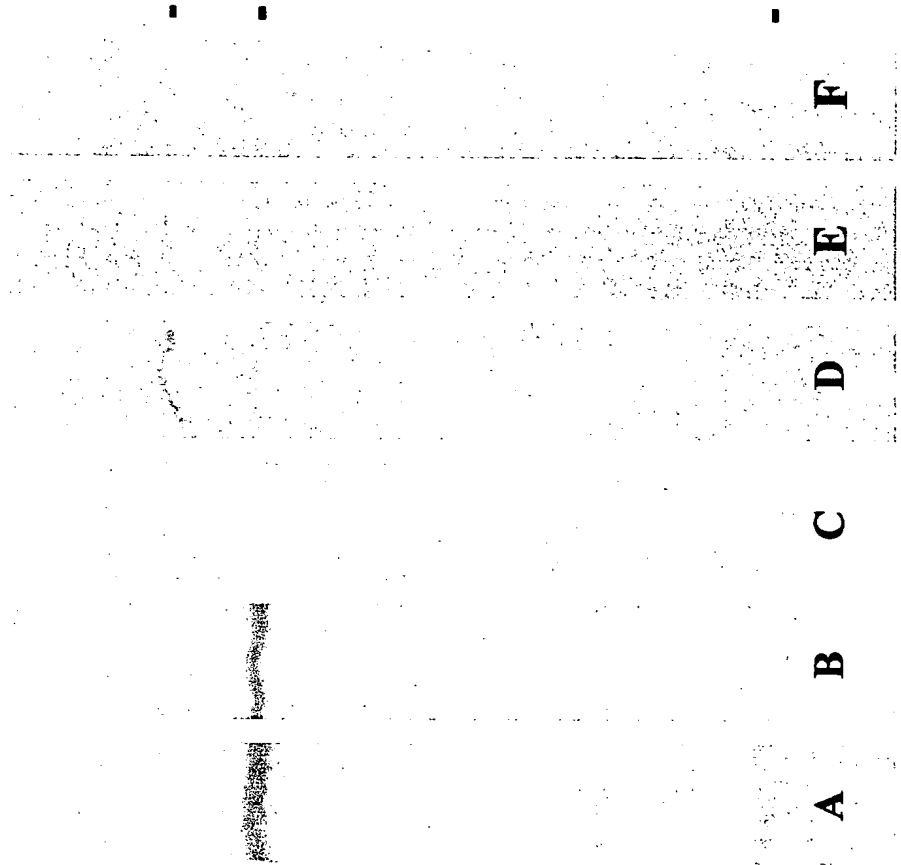
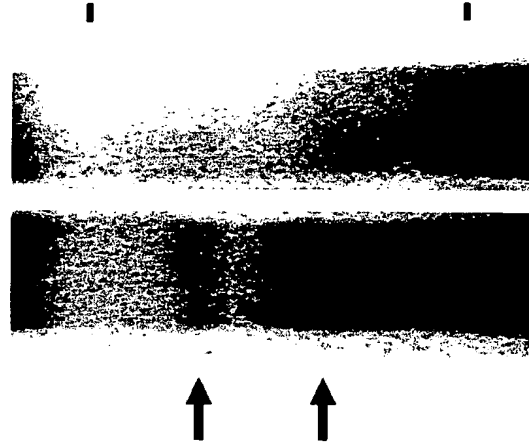


FIG. 2B



>ref|XM 001910.1| Homo sapiens calcium channel, voltage-dependent, L type,
alpha 1S subunit (CACNA1S), mRNA, Length = 6615

Score = 79.8 bits (40), Expect = 1e-12
Identities = 46/48 (95%)
Strand = Plus / Plus

FIG. 3A

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 48
|||||
Sbjct: 3938 ctgattgtcattggcagcatcattgatgtcatcctcagtgagatcgac 3985

Score = 622 bits (314), Expect = e-176
Identities = 462/510 (90%), Gaps = 1/510 (0%)
Strand = Plus / Plus

Query: 49 gacccgacgagagtgcgccgcatctccagcgcccttctccgcctgttccgggtcatgagg 108
|||||
Sbjct: 4043 gaccagatgagagtgcgccgcatctccagcgcccttctccgcctgttccggtcatgagg 4102

Query: 109 ttgatcaagctgctgagccgcgcgaggcggtgcgcacgctgctccggaccttcatcaag 168
|||||
Sbjct: 4103 ctgatcaagctgctgagccggcgagaggagtgcgaaacctcctctgtggacgttcatcaag 4162

Query: 169 tcctccaggccctgacctacgtggctctgctcatcgctcatgctcttcttcatctatgct 228
|||||
Sbjct: 4163 tcctccaggccctacctacgtggctctgctcatcgctcatgctcttcttcatctacgct 4222

FIG. 3B

Query: 229 gtcacggcatgcagatgttttgggaagatcgccatgggtggacgggaacccagataaaaccgg 288
|||||
Sbjct: 4223 gtcacggcatgcagatgttttgggaagatcgccatgggtggacgggaacccaaataaaaccgg 4282

Query: 289 aacaacaatttccagacacctccctcaggctgtgctgctgtctcttcagggtgcgccacgggt 348
|||||
Sbjct: 4283 aacaacaatttccagacacctcccaacaagctgtgctactgctcttcagggtgtgcaacagggt 4342

Query: 349 gaggcgtggcaggagatcctgctggcctgcaggtaacgggcagctgtgcgaccccgagtca 408
|||||
Sbjct: 4343 gaggcgtggcaggagatcctactggcctgcagctatgggaagctgtgtgacccagagtcg 4402

Query: 409 gactacctccctggggaggagtagtataacctgcggcacccgacttgcctactactacttcac 468
|||||
Sbjct: 4403 gactatgccccaggggaggagtagtacacatgtggcaccaactttgcatactactacttcac 4462

Query: 469 agcttctacatgctctgtgccttcctgatcatcaacctcttctggctgtgatcatggac 528
|||||
Sbjct: 4463 agcttctacatgctctgtgccttcctggatcatcaacctcttctggctgtgatcatggac 4522

Query: 529 aatttttgactacctcaccc-ggactgggtcc 557
|||||
Sbjct: 4523 aatttttgactacctcacccgggactgggtcc 4552

FIG. 3C

>ref|NM 000069.1| Homo sapiens calcium channel, voltage-dependent, L type,
alpha 1S, subunit (CACNA1S), mRNA, Length = 6160

Score = 79.8 bits (40), Expect = 1e-12
Identities = 46/48 (95%)
Strand = Plus / Plus

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgcac 48
|||||
Sbjct: 3787 ctgattgtcatcggcagcatcattgatgtcatcctcagtgagatcgcac 3834

Score = 622 bits (314), Expect = e-176
Identities = 462/510 (90%), Gaps = 1/510 (0%)
Strand = Plus / Plus

Query: 49 gaccccgacgagagtgcccgcatctccagcgcttcttcgacctgttcgggtcatgagg 108
|||||
Sbjct: 3892 gacccagatgagagtgcccgcatctccagcgcttcttcgacctgttcgggtcatgagg 3951

Query: 109 ttgatcaagctgctgagccgagcgagggcgtgcgcacgtgctccgacaccttcatcaag 168
|||||
Sbjct: 3952 ctgatcaagctgctgagccgagcgagggcgtgcgcacgtgctccgacaccttcatcaag 4011

Query: 169 tccttcaggccctgccctacgtggctctgctcatcgatgctcttctcatctatgct 228
|||||
Sbjct: 4012 tccttcaggccctaccctacgtggctctgctcatcgatgctcttctcatctatgct 4071

FIG. 3D

Query: 229 gtcacggcatgcagatgtttgggaagatgcgccatggtggacggaacccagataaacccgg 288
|||||
Sbjct: 4072 gtcacggcatgcagatgtttgggaagatgcgccatggtggacggaacccaaataaacccgg 4131

Query: 289 aacaacaatttccagaccttccctcaggctgtgctgctcttccagggtgcgccacgggt 348
|||||
Sbjct: 4132 aacaacaatttccagaccttcccaagaagctgtgctactgctcttcagggtgtgcaacagggt 4191

Query: 349 gaggcgtggcaggagatcctgctggcctgcaggtaaggggcagctgtgcgaccccgagtca 408
|||||
Sbjct: 4192 gaggcctggcaggagatcctactgctgcagctatgggaagctgtgtgacccagagtcg 4251

Query: 409 gactacctccctggggaggagtagtatcctgcggcacccgacttcgcctactactacttcac 468
|||||
Sbjct: 4252 gactatgccccaggggaggagtagtacacatgtggcaccaactttgcatactactacttcac 4311

Query: 469 agcttctacatgctcttgctgcttcctgatcatcaacctcttctgtggctgtgatcatggac 528
|||||
Sbjct: 4312 agcttctacatgctcttgctgcttcctggtcatcaacctcttctgtggctgtcatcatggac 4371

Query: 529 aattttgactacctcaccc-ggactgggtcc 557
|||||
Sbjct: 4372 aattttgactacctcacccgggactgggtcc 4401

FIG. 3E

>gb|L33798.1|HOMCACNLA Human dihydropyridine-sensitive L-type calcium channel
alpha-1 subunit (CACN1A3) mRNA, complete cds, Length = 6160

Score = 79.8 bits (40), Expect = 1e-12
Identities = 46/48 (95%)
Strand = Plus / Plus

Query: 1 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 48
|||||
Sbjct: 3787 ctgattgtcatcggcagcatcattgacgtcatcctcagtgagatcgac 3834

Score = 622 bits (314), Expect = e-176
Identities = 462/510 (90%), Gaps = 1/510 (0%)
Strand = Plus / Plus

Query: 49 gacccgacgagagtgcccgcatctccagcgccctcttccgcctgttccgggtcatgagg 108
|||||
Sbjct: 3892 gacccagatgagagtgcccgcatctccagcgccctcttccgcctgttccgtgtcatgagg 3951

Query: 109 ttgatcaagctgtgagccgcccagggcggtgcgcacgctgtccggaccttcatcaag 168
|||||
Sbjct: 3952 ctgatcaagctgtgagccgcccagggcggtgcgaaggagtgcgaaccttcttggacgttcatcaag 4011

Query: 169 tccttccaggccctgccctacgtggctctgctcatcgctcttcttccatctatgct 228
|||||
Sbjct: 4012 tccttccaggccctaccctacgtggctctgctcatcgctcttcttccatctacgct 4071
|||||

Query: 229 gtcacggcatgcagatgtttgggaagatgcccatggcggacggaaacccagataaaacccg 288
|||||
Sbjct: 4072 gtcacggcatgcagatgtttgggaagatgccctggatgggaccccaataaaacccg 4131
|||||

Query: 289 aacaacaattccagaccttccctcaggctgtgctgctcttccaggcgcacagggc 348
|||||
Sbjct: 4132 aacaacaacttccagaccttcccacaagctgtgctactgctcttccaggcgtgcaacaggt 4191
|||||

Query: 349 gaggcgtggcaggagatccctgctggcctgcaggctacgggcagctgtgcgaccccgagtca 408
|||||
Sbjct: 4192 gaggcctggcaggagatccctactgctggcctgcagctatgggaagctgtgtgacccagagtcg 4251
|||||

Query: 409 gactacctccctggggaggaggtataacctggcgccacccgacttcgcctactactacttcac 468
|||||
Sbjct: 4252 gacratgccccaggggaggaggtacacatgtggcaccaacttcgcatactactacttcac 4311
|||||

Query: 469 agcttctacatgctctgtgccttccctgatcatcaacctcttctgtggctgtgatcatggac 528
|||||
Sbjct: 4312 agcttctacatgctctgtgccttccctgatcatcaacctcttctgtggctgtgatcatggac 4371
|||||

Query: 529 aattttgactacctcaccg-ggactgggtcc 557
|||||
Sbjct: 4372 aattttgactacctcaccgaggactgggtcc 4401
|||||

FIG. 3F

FIG. 4A

>ref|XM 001910.1| Homo sapiens calcium channel, voltage-dependent, L type,
alpha 1S subunit (CACNA1S), mRNA, Length = 6615

Score = 107 bits (54), Expect = 5e-21
Identities = 63/66 (95%)
Strand = Plus / Plus

Query: 1 tgggaatggttcgacttcctgattgtcatcggcagcatcattgacgtcatcctcagtgag 60
 ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
Sbjct: 3920 tgggaatggttcgacttcctgattgtcatcggcagcatcattgacgtcatcctcagtgag 3979

Query: 61 atcgac 66
 |||||||
Sbjct: 3980 atcgac 3985

Score = 507 bits (256), Expect = e-141
Identities = 388/432 (89%)
Strand = Plus / Plus

Query: 67 gacccgcagcagagtgcccgcatctccagcgcccttctccgcctgttccgggtcatgagg 126
 ||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
Sbjct: 4043 gacccagatgagagtgcccgcatctccagcgcccttctccgcctgttccgtgtcatgagg 4102

Query: 127 ttgatcaagctgctgagccgcgcgagggcgctgcgcacgctgctctggaccttcatcaag 186
 ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| ||||||| |||||||
Sbjct: 4103 ctgatcaagctgctgagccgggcagaggagtgcgaaacctcctctggtgacgttcatcaag 4162

FIG. 5A

>ref|XM 003238.1| Homo sapiens calcium channel, voltage-dependent, L type,
alpha 1D subunit (CACNA1D), mRNA, Length = 7362

Score = 89.7 bits (45), Expect = 1e-15
Identities = 45/45 (100%)
Strand = Plus / Plus

Query: 1 ctcacgcgtaatcggcagcattatagacgtggccctcagcgaagca 45
|||||
Sbjct: 4171 ctcacgcgtaatcggcagcattatagacgtggccctcagcgaagca 4215

Score = 946 bits (477), Expect = 0.0
Identities = 496/500 (99%), Gaps = 2/500 (0%)
Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcaccttttccgctcttttccgagtgatgcga 108
|||||
Sbjct: 4264 aactctgaagagagcaatagaatctccatcaccttttccgctcttttccgagtgatgcga 4323

Query: 109 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag: 168
|||||
Sbjct: 4324 ttggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag 4383

Query: 169 tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 228
|||||
Sbjct: 4384 tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 4443

FIG. 5B

```
Query: 229  gtcattggcatgcagatgtttgggaaagtggccatgagagataacaaccagatcaatagg 288
           |||||||
Sbjct: 444  gtcattggcatgcagatgtttgggaaagtggccatgagagataacaaccagatcaatagg 4503

Query: 289  aacaataacttccagacgtttcccccaggcgggtgctgctgtccttcagggtgtgcaacagggt 348
           |||||||
Sbjct: 4504 aacaataacttccagacgtttcccccaggcgggtgctgctgtccttcagggtgtgcaacagggt 4563

Query: 349  gaggcctggcaggagatccatgctggcctgtctcccagggaagctctgtgacccctgagtcca 408
           |||||||
Sbjct: 4564 gaggcctggcaggagatccatgctggcctgtctcccagggaagctctgtgacccctgagtcca 4623

Query: 409  gattacaacctcggggaggaggtatcacatgtgggaggcaactttgccattgtctatttcattc 468
           |||||||
Sbjct: 4624 gattacaacctcggggaggaggtatcacatgtgggaggcaactttgccattgtctatttcattc 4683

Query: 469  agnttttacatgctctctgtgcatttcttga-cattcaactctgtttgggtggctgtccatcggga 527
           |||||||
Sbjct: 4684 agtcttttacatgctctctgtgcatttcttgatcatccaatctgttt-gtgggtgtccatcggga 4742

Query: 528  taatttcgactatctgaccc 547
           |||||||
Sbjct: 4743 taatttcgactatctgaccc 4762
```

FIG. 5C

>ref|NM_000720.1| Homo sapiens calcium channel, voltage-dependent, L type,
alpha 1D subunit (CACNA1D), mRNA, Length = 7193

Score = 87.7 bits (44), Expect = 5e-15
Identities = 44/44 (100%)
Strand = Plus / Plus

Query: 1 ctcacgcgtaatcggcagcattatagacgtggccctcagcgaagc 44
|||||
Sbjct: 4001 ctcacgcgtaatcggcagcattatagacgtggccctcagcgaagc 4044

Score = 946 bits (477), Expect = 0.0
Identities = 496/500 (99%), Gaps = 2/500 (0%)
Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcaccttttccgctcttccgagtgatgcga 108
|||||
Sbjct: 4094 aactctgaagagagcaatagaatctccatcaccttttccgctcttccgagtgatgcga 4153

Query: 109 ttggtgaagcttctcagcagggggaaggcatccggacattgctgtggacttttattaaag 168
|||||
Sbjct: 4154 ttggtgaagcttctcagcagggggaaggcatccggacattgctgtggacttttattaaag 4213

Query: 169 tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 228
|||||
Sbjct: 4214 tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttcatctatgcg 4273

FIG. 5D

```
Query: 229  gtcatcggcatgcagatgtctcgggaaagtcccatgagagataacaaccagatcaatagg 288
           |||||||
Sbjct: 4274  gtcatcggcatgcagatgtctcgggaaagtcccatgagagataacaaccagatcaatagg 4333

Query: 289  aacaataactccagacgtctcccccaggcggctgctgctcctccaggtgtgcaacaggc 348
           |||||||
Sbjct: 4334  aacaataactccagacgtctcccccaggcggctgctgctcctccaggtgtgcaacaggc 4393

Query: 349  gaggcctggcaggagatcatcgtggcctgtctcccagggaagctctgtgacctgagtc 408
           |||||||
Sbjct: 4394  gaggcctggcaggagatcatcgtggcctgtctcccagggaagctctgtgacctgagtc 4453

Query: 409  gattacaacctcggggaggagtatacatgtgggagcaactttgccattgtctatttcattc 468
           |||||||
Sbjct: 4454  gattacaacctcggggaggagtatacatgtgggagcaactttgccattgtctatttcattc 4513

Query: 469  agntttttacatgctctgtgcatttctga-catcaatctgcttggtggctgcatcatgga 527
           |||||||
Sbjct: 4514  agtcttttacatgctctgtgcatttctgatcatcaatctgctt-gtggctgcatcatgga 4572

Query: 528  taatttcgactatctgaccc 547
           |||||||
Sbjct: 4573  taatttcgactatctgaccc 4592
```


FIG. 5E

>gb|M83566.1|HUMCACH1A Human neuroendocrine/beta-cell-type calcium channel
alpha-1 subunit mRNA, complete cds, Length = 7193

Score = 87.7 bits (44), Expect = 5e-15
Identities = 44/44 (100%)
Strand = Plus / Plus

Query: 1 ctcatcgtaatcggcagcattatagacgtggccctcagcgaagc 44
 |||||
Sbjct: 4001 ctcacgtaatcggcagcattatagacgtggccctcagcgaagc 4044

Score = 946 bits (477), Expect = 0.0
Identities = 496/500 (99%), Gaps = 2/500 (0%)
Strand = Plus / Plus

Query: 49 aactctgaagagagcaatagaatctccatcaccttttccgctctttccgagtgatgcga 108
 |||||
Sbjct: 4094 aactctgaagagagcaatagaatctccatcaccttttccgctctttccgagtgatgcga 4153

Query: 109 ttgggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag 168
 |||||
Sbjct: 4154 ttgggtgaagcttctcagcaggggggaaggcatccggacattgctgtggacttttattaaag 4213

```
Query: 169  tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttccatctatgcg 228
|||||
Sbjct: 4214  tcctttcaggcgctcccgtatgtggccctcctcatagccatgctgttcttccatctatgcg 4273
|||||

Query: 229  gtcattggcatgcagatgttttgggaaagtggccatgagagataaacaaccagatcaatagg 288
|||||
Sbjct: 4274  gtcattggcatgcagatgttttgggaaagtggccatgagagataaacaaccagatcaatagg 4333
|||||

Query: 289  aacaataacttccagacgttttccccaggcgggtgctgcttcttcagggtgtgcaacaggc 348
|||||
Sbjct: 4334  aacaataacttccagacgttttccccaggcgggtgctgcttcttcagggtgtgcaacaggc 4393
|||||

Query: 349  gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacccctgagtc 408
|||||
Sbjct: 4394  gaggcctggcaggagatcatgctggcctgtctcccagggaagctctgtgacccctgagtc 4453
|||||

Query: 409  gattacaacctcggggaggaggtatcacatgtgggagcaactttgccattgtctatttcac 468
|||||
Sbjct: 4454  gattacaacctcggggaggaggtatcacatgtgggagcaactttgccattgtctatttcac 4513
|||||

Query: 469  agnttttacatgctctgtgcatttctga-catcaatctgttttgggtggctgtcatcatgga 527
|||
Sbjct: 4514  agtttttacatgctctgtgcatttctgatcatcaatctgttt-gtggctgtcatcatgga 4572
|||||

Query: 528  taatttcgactatctgaccc 547
|||||
Sbjct: 4573  taatttcgactatctgaccc 4592
|||||
```

FIG. 5F

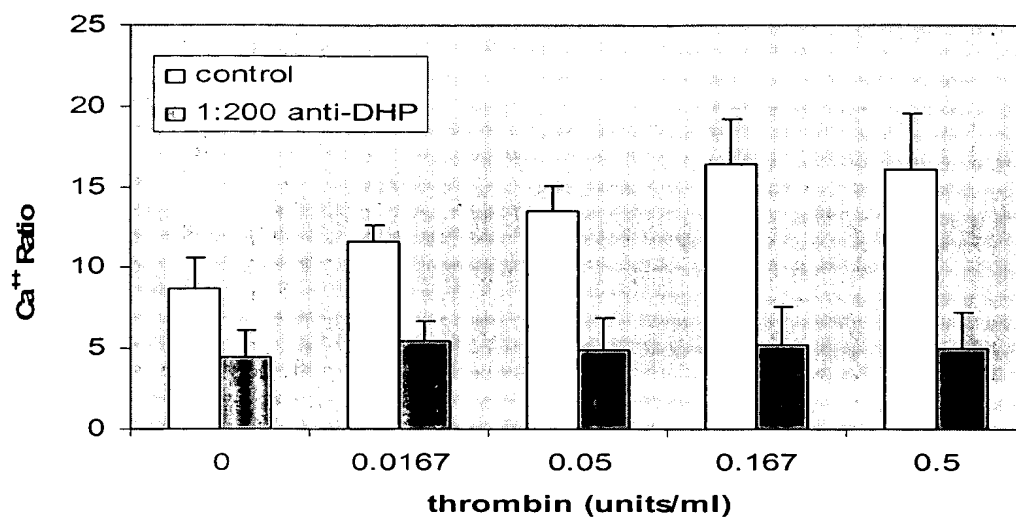


Figure 6

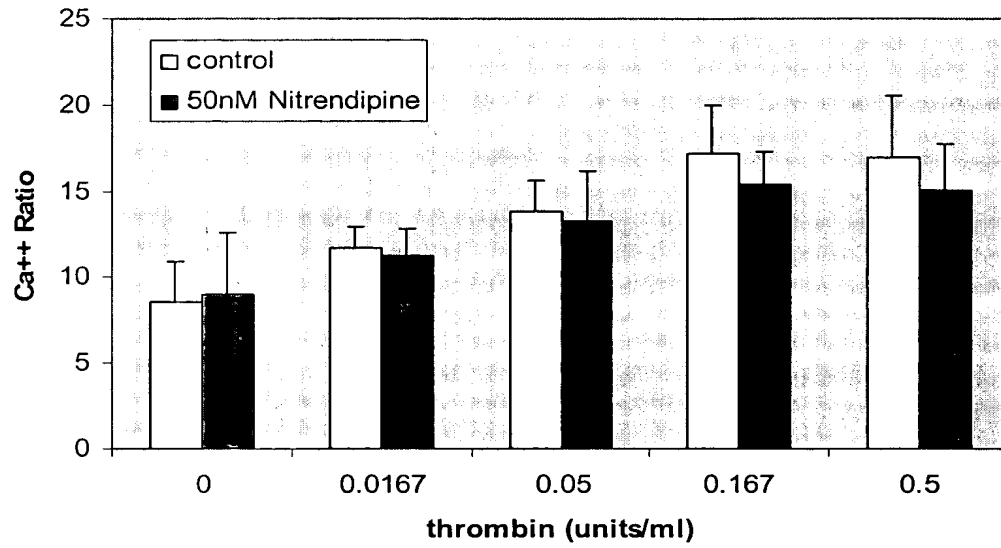


Figure 7

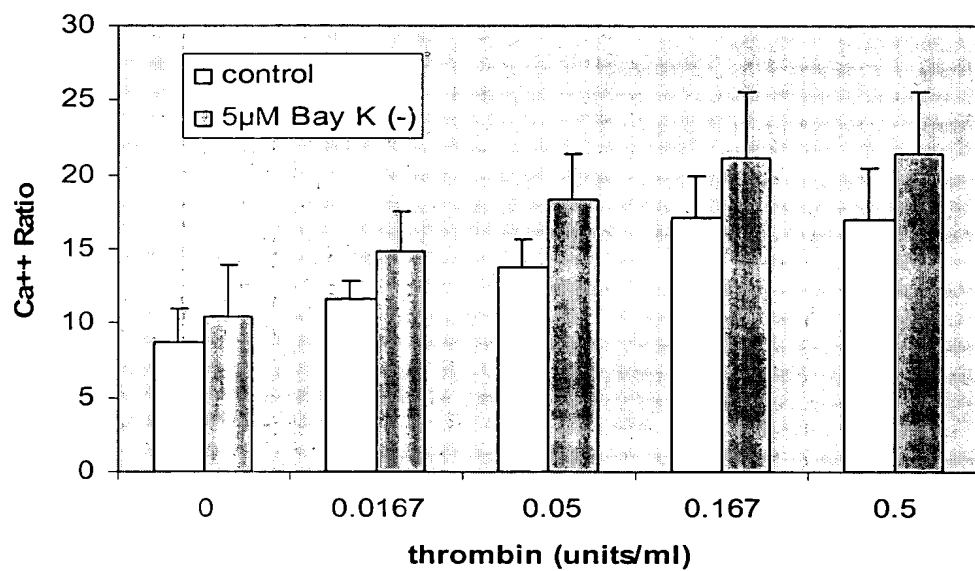


Figure 8